

**Contractor's Progress Report  
(Technical and Financial)  
CDRL A001**

**For: Safe Surgery Trainer**

**Prime Contract: N00014-14-C-0066**

**For the Period November 1, 2014 to November 30,  
2014**

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## Medical Modeling - Safe Surgery Trainer

This Monthly Progress Report is provided in accordance with the contract CDRL.

**1) Contract Period of Performance:** 12 March, 2014 to 30 September, 2015

**2) Cost (Estimated financials may differ from actual invoice)**

a) Total Amount Funded to date:	\$910,256.00
b) Estimated Reporting Period Expenditures	\$82,957.64
c) Estimated Cumulative Expenditure	\$381,270.32
d) Estimated Remaining Funds To Completion	\$528,985.68

**3) Progress and Accomplishments During Report Period**

- a) Program Management – Ongoing communication and project management with project team and sub-contractors. Ongoing outreach with medical centers (see below). Ongoing project management according to Alion's CMMI Level 3 processes.
  - i) Coordinated field study at I/ITSEC. UCF will conduct a Field Study directly from the Alion booth exhibit on the conference expo floor. The study will make a preliminary test of the first three scenarios of the Safe Surgery Trainer. The base hypothesis is that even in this early state, SST can effect some change in basic knowledge. This will be tested via a paper test given to a control group (no game) and the test group (game). UCF has coordinated, obtained approval for, and followed appropriate IRB protocols through the University of Central Florida.
  - ii) Continued coordinating of technology transfer, surgical visitation, and study participation.
  - iii) Ongoing interactions with medical representatives that were interested in or attended the SST StoryJam. StoryJam Participating organizations included: Portsmouth Naval Hospital, Langley AFB Hospital, Fort Eustis McDonald Healthcare, Eastern Virginia Medical School, Maryview Hospital, Mary Immaculate Hospital, and the Children's Hospital of the King's Daughters.
  - iv) Continued outreach to the VA, Navy, Army, Airforce, and civilian healthcare organizations to encourage participation and alignment.
- b) Prototype Development – Finalization of Iteration One in preparation for field study at I/ITSEC. Intense iterations, more than once per week, of the first three scenarios including web demos to both the art and design teams. Integrated avatars, environmental art, and user interface.
- c) Instructional Design and Healthcare Research – Continued development and refinement of first three scenarios to ensure gameplay and conversations match

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the learning objectives. Created first draft of scenario four involving detailed timelines, character interaction, and plot chronology. Continued reviewing and updating the terminal and enabling Learning Objectives (see below). Reviewed research and videos.

i) Learning Objectives:

- (1) Facilitate Psychological Safety;
- (2) Conduct an Effective Timeout;

- d) Research Studies – Developed study plan, metrics, and questionnaire for I/ITSEC Field Study – submitted final IRB. Created/refined measurement outlines for usability studies, evaluation study, closed loop communication, and timeout. Continued plans for IRB approval and shifted IRB date to December for May testing. Participated in design and development discussions to ensure research and development goals are aligned.

**4) Work in Progress / Plans for Next Month**

- a) Program Management - Continue identifying communication channels, managing contracts, and coordinating with team members and outside participants. Continue involving team members and stakeholders in design, testing, and development.
- b) Prototype Development – Continue developing SST software, game-flow, and mechanics. Continue developing art assets including 2D, 3D environmental, and character avatars. Continue building core infrastructure, user-interface, and scenario tools. Begin Iteration Two.
- c) Instructional Design and Healthcare Research – Continue developing/refining target scenarios and conversations. Formalize/refine the scenario's characters, backstory, and scenario. Formalize/refine the Learning Objectives.
- d) Research Studies – Integrate refined learning objectives into measurement outlines. Conduct I/ITSEC Field Study, collect data, and analyze results. Coordinate with Portsmouth Naval regarding IRB. Continue participation in discussions to ensure design, development, and research goals are in alignment (ex. psychological safety).

**5) Milestones / Deliverables**

Name/Description	Date (Target or Actual)	Notes/Status
Project Management Plan	<b>DONE:</b> May 28, 2014	<b>COMPLETE</b>
Reports	15 <sup>th</sup> of each month	This document
Presentation Materials	As appropriate	ONR Kickoff Brief
Software Requirements Document	<b>Target:</b> Nov 30, 2014	
Scenario Design Document	<b>Target:</b> Sept 30, 2014 & June 30, 2015	
Prototype - Executable	<b>Target:</b> December, 2014, May, 2015, and Aug, 2015	Iter 1 – <b>COMPLETE 12/1/14</b> Iter 2 – Target Apr 30, 2015 Iter 3 – Target July 31, 2015

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Prototype - Source	<b>Target:</b> Sept 30, 2015	
Research Data	<b>Target:</b> Sept 30, 2015	
Final Report	<b>Target:</b> Sept 30, 2015	
Milestone – Initiation	<b>DONE:</b> May 31, 2014	<b>COMPLETE</b>
Milestone – Iteration 1	<b>Target:</b> Dec 1, 2014	<b>COMPLETE</b>
Milestone – Iteration 2	<b>Target:</b> Apr 30, 2015	
Milestone – Iteration 3	<b>Target:</b> July 31, 2015	
Milestone – Conclusion	<b>Target:</b> Sept 30, 2015	
Milestone – ONR Kickoff	<b>DONE:</b> Apr 22, 2014	<b>COMPLETE</b>
Milestone – StoryJam	<b>DONE:</b> May 25, 2014	<b>COMPLETE</b>

#### 6) Risks/Issues/Concerns/Problems

- a) Still need a transition agreement or memorandum with Portsmouth Naval Hospital. Working with new XO, Capt Smith. Will also begin work to brief/update the new CO, Capt Vai. (Note – see October report for more detailed analysis of previous risk)

#### 7) Travel Accomplished

- a) I/ITSEC, Dec 1 – Dec 4, Orlando Florida. Included labor hours for onsite SST effort such as conducting the field study. No actual travel budget.

#### 8) Planned Travel

- a) Upcoming travel Jan 10-14, to the International Meeting for Simulation in Healthcare, IMSH, in New Orleans. Direct project expenditures are expected to be minimal or near zero.

#### 9) Related Activities

- a) Presented at the Design of Learning Games Community Workshop, at I/ITSEC, Wednesday, Dec 3<sup>rd</sup>.
- b) Conduct Field Study from the Alion booth at I/ITSEC – only such study of the conference!
- c) Abstract accepted for International Modelling and Simulation in Healthcare (IMSH) 2015 conference, New Orleans, Louisiana, Jan 10-14, 2015. “Safer Surgery with Games – The Moment of Truth”
- d) Presented SST concepts in a brief at the M&S Southwest Modeling and Simulation Conference in Scottsdale, Arizona, Mar 12, 2014.